MICHIGAN QRP CLUB

THE FIVE-WATTER

SEPTEMBER 1991

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The fine print...

The Michigan QRP Club was organized on January 19, 1978 in Michigan's central Lower Peninsula and has grown to include members from many parts of the country and around the world.

Section 2(a) of the club's constitution reflects its purpose: "...to foster and develop friendship and cooperation among amateur radio operators who have a common interest in the unique pleasure and challenge of operation... at power levels of 5 watts output or less." The Michigan QRP Club is affiliated with the American Radio Relay League.

Membership is open to all licensed amateurs and inquiries are invited. An application and club information sheet can be obtained by addressing the Membership Chairperson, Michigan QRP Club, P.O. Box 80804, Lansing, MI 48908-0804. In the USA, dues are $5 for each twelve-month period and there is an additional one-time initiation fee of $2. DX stations are charged $10 for each twelve-month period and an additional one-time initiation fee of $2. M-QRP-Club has its own personalized pin-on name badges as well as attractive QSL cards.

The Michigan QRP Club Net meets Tuesday evenings at 9 p.m. EST and EDST (0200Z and 0100Z Wednesday) on 3.535 MHz. An informal net sometimes meets at 7 p.m. on the same frequency for those who find the propagation more favorable. Members and non-members are cordially invited to QNI.

The M-QRP-Club subscribes to the now generally recognized position that QRP is operation at an output power of five watts or less.

CLUB OFFICERS ARE:

President- Lowell Corbin, KD8FR Vice President- Stan Arnett, AC8W

Secretary- L.T. "Buck" Switzer, N8CQA Treasurer- Don Sloan, WD8PRW

DIRECTORS:

Jerry Totten, K8JRO and Jack McDuffie, N9GPF/8

HONORARY DIRECTOR FOR LIFE: Ralph Burch, W8LCU

EDITOR: Emory R. Schley, N4NCU

THE FIVE-WATTER *is published by the Michigan QRP Club in March, June, September and December. The products, projects, features and fantasies described are solely for the delight of our readers. No testing has been done and no warranties are intended or implied. If you have items for publication, send them to the Editor, Emory R. Schley, N4NCU, 10150 SW 151st Place, Dunnellon, FL 32630, USA. All other items should be directed to the club address in Lansing, Michigan.*

President's message

Field Day started off a bit on the soggy side but the rain quit just before dark and the sun did start to shine. The night proved to be clear and cool- in fact, the heat from the propane lantern felt good up until the cylinder of gas ran out about 0100 hours.

Fortunately, my wife's good foresight provided us with candlelight to continue seeing by, while operating with our flea power station! Two candles do not provide the same amount of light or heat as one propane lantern, though.

One casualty at the outset was my cherished Ten-Tec Argonaut 509. I did not take the time or effort to be sure that the power cable was polarized correctly and it was dealt the death blow! Jerry, K8JRO had brought his 509, which was pressed into service quickly. Mine has been returned from Ten-Tec, good as new (or better, as they have updated the TX mixer).

One casualty at the outset was my cherished Ten-Tec Argonaut 509.

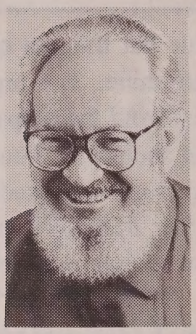
By the time you read this the ARRL National Convention will be history. It is being held this year at Saginaw, MI and the Michigan QRP Club and QRP-Amateur Radio Club, International, will be sharing space at the convention. Previous plans were to operate a special events QRP station from a caboose at the Railway Museum in Saginaw but it has not been spotted yet and it would need much cleaning up before it would be useful to us.

Ralph Caryl, W8LHG has made arrangements for us to set up inside the renovated Depot Telegraphy Room, which is much to his liking, as he is very interested in Railway Telegraphy.

I hope you have all survived the summer and are ready to enter the fall round of contests. My 230-foot dipole became a victim of a recent windstorm but it is repaired and ready to go back up, so I should be ready for the fall and winter months of operating. See you on the bands.

Vy 73, Lowell-KD8FR

From the Editor's Logbook:



You've undoubtedly noticed that *The Five-Watter* has taken on somewhat of a new look with this issue. Inside this edition, you'll find out the results of 30 days I spent using Ten-Tec's new Argonaut II, along with some QRP mods for the Century 22, the Yaesu FT-7 and the Icom 751. *(And yes, that handsome teen-ager staring out at you from this page is Ye Olde Editor.)*

As of Aug. 4, according to Club president Lowell Corbin, KD8FR, club membership number 911 was issued. The club is showing some exiciting growth potential. Lowell and his wife Robin have taken over the mailing list chores for *The Five-Watter* and he tells me that each member's dues expiration date will be added to each label. "Last Issue" will continue to appear on the cover for those who need just a little bit stronger reminder.

As you can read in a Letter to the Editor on page 18, the Michigan QRP Club may be falling victim to the same woes that plague many other Amateur Radio clubs.

The workload in running the club, conducting weekly nets, compiling contest results, organizing a Field Day effort and even in producing and mailing a quarterly newsletter requires a tremendous amount of work. If others would volunteer their services, that workload could be eased considerably by spreading out the duties.

If you don't live in Michigan, close to the action, don't let that deter you. I've never set foot in Michigan in my life. I'm not even sure I know where Michigan is, but I'm told it's north of Georgia somewhere. Despite the distance, the U.S. Mail and telephones can do wonders in erasing distances between club members. The point is even if you live quite some ways from the "action," you can still take on an active role in club activities.

If you would like to run a net, volunteer for Field Day preparation, or help out in any of the other areas, contact Lowell or one of the other club officers and I'm sure something can be found for you to do. If you have an item to be published in *The Five-Watter,* then send it to me. Addresses are found on the inside cover of each issue. The rest of us will appreciate the help, I'm sure, and both the Michigan QRP Club and *The Five-Watter* will be better due to the team effort.

Speaking of polarization

By C.F. Rockey,W9SCH

Let's begin by noting that waves are polarized, not antennas. In the simplest terms, polarization merely describes how the waves "sit" in space.

In the early 1800s, Michael Faraday first spoke of electric fields, which tend to be associated with electrical voltage differences, and magnetic fields which originate from moving electrical charges.

The ionosphere is neutral with respect to polarization...

He pictured these as "lines of force, or flux." According to this concept, an electromagnetic wave consists of a changing electric field and a correspondingly changing magnetic field. These mutually exchange energy and move together through space at about a foot per nanosecond. The electric and magnetic flux lines are always at right angles to each other, and their motion is mutually at right angles to these flux lines. Polarization describes the direction taken by the electric flux lines. In radio, waves whose electric lines are parallel to the local earth surface are horizontally polarized while those with electric flux perpendicular to the earth are called vertically-polarized waves.

Now when a wave moves through empty space far from any electrically-conductive object, its polarization is immaterial. But when it is near the earth, polarization does matter. An electric field cannot exist when its flux lines are parallel to a conductive surface. Since the earth is at least partially conductive, a horizontally polarized wave cannot move far over it before its electric field is "short-circuited" and its energy soon converted into heat. But since, in a vertically polarized wave, the electric flux is perpendicular to the earth, it is affected much less. AM broadcast stations always radiate vertically polarized waves so that a "ground wave," guided by the conductive earth, may extend for a considerable distance. But, at VHF or UHF, "dirt" usually acts more as an insulating than a conductive substance. So, at these frequencies, polarization is chosen from other considerations-- often noise levels.

As radio amateurs, we are probably most concerned with ionospherically-bent skywaves as these tend to cover greater earthly distances with less radiated power. Although controversy persists here, it

is generally agreed that the ionosphere's behavior is neutral with respect to wave polarization. But the ionosphere does have the habit of mixing-up the polarization of waves passing through it. Thus regardless of incident polarization, waves emerging from it tend to act largely as if unpolarized, the electric flux direction is random or changes constantly at a distant receiver.

How does a transmitting antenna determine the polarization of the radiated wave? The general rule seems to be: The wave is polarized primarily in the direction of that part of the antenna which carries the greatest RF current. If this part is horizontal, so is the radiated wave's primary polarization, as in the case of the typical ham's horizontal dipole. But with a vertical antenna, like a "ground plane," vertically polarized waves are originated. (With a sloper, the guess is yours. But since the ionosphere doesn't "care" about polarization, neither do we, usually.)

When an antenna is sited relatively close to the earth, as most amateur antennas are, the situation is modified thereby. The earth beneath the antenna, being neither a perfect insulator nor a perfect conductor, reacts differently to waves of different polarizations. Horizontally polarized waves, for instance, seem to be reversed in phase upon reflection from the "dirt." Since the radiation pattern of any antenna is determined by the interaction of the directly radiated and the reflected waves, the tendency is for the resultant energy to be largely directed straight up when a horizontal antenna is used, unless its height above the ground approaches one-half wavelength or more (35 feet or more, usually). But long range communication generally best makes use of energy radiated close to the earth's surface. This places low horizontal antennas at a DX disadvantage.

Vertically polarized waves, however, tend to be reflected from "dirt" without change of phase. Thus there is a strong tendency for a vertical antenna close to ground to concentrate its radiated energy horizontally, making it seemingly a better DX antenna. But we must be careful here; many discussions of antennas in the ham literature may generate false hopes within the amateur's heart. They often assume that "dirt" acts as a perfect conductor-- which it certainly does not--thereby concealing an electromagnetic "snake in the grass"...

What then is this "rapacious reptile" we must watch-out for when contemplating DX with a vertical antenna? It is that strange effect involving what physicists call "the pseudo-Brewster Angle." It appears that, for practical purposes, "dirt" simply refuses to reflect vertically polarized waves that strike it below a certain critical "Brewster Angle,"

Speaking of polarization...

about 15 degrees above local earth's surface, for most Midwest American "dirt."

Since, under these conditions, there is no reflected wave to reinforce the directly radiated one, this nice "super low-angle radiation" simply does not develop. There is practical advice here: A horizontal dipole at a height of one-half wavelength and a vertical one at ground-level will be found to have about the same vertical energy distribution in most cases. This can scarcely be changed by installing "radials" about the vertical because the desirable ground reflection occurs a number of wavelengths away from the antenna, maybe hundreds of feet away.

One further comment: It usually does not pay to raise a vertical antenna to great heights above ground for other than VHF-UHF operation.

When you do, you will probably find that much of the energy normally directed to a lower angle will be deflected upwards and thus wasted for long-range communication purposes.

Many years ago, AM broadcasters found this out the hard way; they built their stations and put their vertical antennas atop high buildings only to find that such stations experienced much more drastic fading problems at closer distances than did those whose antennas were at ground level.

There is a moral to this story. It might be condensed into "High horizontal, low vertical" when putting up an amateur antenna-- try it yourself and see...
Oh yes, there is such a thing as "circular polarization." But since this is not a common thing among amateurs we will leave a discussion of this between the covers of those thick books where, for us, it belongs.

Are your dues due this month?

Membership dues to the Michigan QRP Club are payable on a 12-month basis during which you will receive four issues of this newsletter. Check your mailing label on the back cover right now while you're thinking about it. If "Last Issue" appears near your address, it's time to remit $5 ($10 for DX addresses) to the club address: MICHIGAN QRP CLUB, P.O. Box 80804, Lansing, MI 48908-0804.

Be sure your membership number is included with your order. All non-U.S. members are asked to make their payments in a form that is payable in U.S. dollars.

A handy little portable QRP rig

By Terry Young, K4KJP

Here is some info you may be able to use, on a QRP rig I checked out recently. A friend, WD4HDT, picked up a DX-Handi 10-meter transceiver by AEA, at Dayton this year.

The rig is the size of an older 2-meter handheld, and includes a built-in battery pack. Two crystals are VXOed. Frequency A covered 28.244 to 28.3 and Frequency B ran from 28.296 to 28.350 MHz, as supplied. Each provides approximately 60 KHz spread.

I was able to work anyone I called when a beam was used...

Power output was 2 watts using the internal battery and 4 watts using an external 12-volt battery power supply. The handheld rig comes with a 52-inch telescoping base-loaded whip which was great for "bicycle mobile" on 10 meters.

I had QSOs with California and Washington state this way and was able to work anyone I called when the transceiver was hooked to the fixed station KLM KT-34A beam.

There is also provision for CW keying with a microswitch button on the top of the rig. No sidetone, though. Keying was clean and crisp when monitored with the fixed station receiver.

This rig had a very good receiver with excellent sensitivity. Signals just seemed to jump out of the background noise! Stability was excellent, and, in fact, far better than originally expected.

I believe these rigs are out of production now, as I have not seen them advertised recently. Perhaps used ones will start showing up at hamfest flea markets.

Try one, the AEA DX-Handi is a nice, hip-pocket, 10-meter QRP rig- and a lot of fun!

Worked a new QRP rig lately?
Write it up and share the experience!

New look for FCC licenses

The FCC has changed the appearance of Amateur Radio Operator licenses. For those who haven't seen the new style of license, here's a copy of one issued in July of this year. Licensees receive two copies, one for the wall and another for the wallet:

Cut Along This Line

Call Sign	Effective Date	Expiration Date
KD4DBG	07/23/91	07/23/01

THIS LICENSE SUBJECT TO CONDITIONS OF GRANT ON THE REVERSE SIDE. THIS LICENSE IS NOT TRANSFERABLE.

Operator Privileges: TECHNICIAN — Station Privileges: PRIMARY

FIXED STATION OPERATION LOCATION

SAME AS MAILING ADDRESS

MARTHA H SCHLEY
10150 SW 151ST PL
DUNNELLON FL 32630

Cut Along This Line

Cut — FCC AMATEUR RADIO LICENSE FCC FORM 660 JUNE 1991 — FOLD

(Licensee's Signature)
FEDERAL COMMUNICATIONS COMMISSION

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

AMATEUR RADIO LICENSE

KD4DBG

MARTHA H SCHLEY
10150 SW 151ST PL
DUNNELLON FL 32630

Cut Along This Line

Special Conditions

Fixed Station Operation Location

SAME AS MAILING ADDRESS

Cut Along This Line

Effective Date	Expiration Date
07/23/91	07/23/01
Operator Privileges	**Station Privileges**
TECHNICIAN	PRIMARY

THIS LICENSE SUBJECT TO CONDITIONS OF GRANT ON THE REVERSE SIDE

NOT TRANSFERABLE

(LICENSEE'S SIGNATURE)

FCC FORM 660

The all-new ARGONAUT II...!

A first-hand report by Emory R. Schley, N4NCU

Ten-Tec's latest entry in the QRP arena is a bit expensive, but if first class is the way you want to go, it's the only game in town...

The long-awaited Argonaut II from the kindly folks at Ten-Tec is finally on the shelves of your local dealer. Ten-Tec provided me with one of the new rigs to run through its paces so I could pass on the results to you.

The 30 days I had the rig was, unfortunately, a period plagued by an unusually high number of solar flares and SIDs, so my results during the testing period may not be exactly what you would experience at your location.

I used to own a Kenwood TS-440S with automatic antenna tuner. Now the rig at N4NCU is an Icom 735. I found the Argo II to be almost like a cross between those two popular Japanese rigs, but with a few features unique enough to give it a distinction all its own.

The Ten-Tec is ruggedly built and with the care any reasonable ham would lavish on a new rig, it should last for a long time. One of the advantages of QRP operation is not having to worry about over-stressed finals, and of even greater importance to our neighbors is the ability to operate in an increasingly complex and crowded RF environment without generating any TVI.

A number of operations are selectable from the rig's control panel. A Morse Code annunciator sounds out the initial letter of the mode you select as you cycle through AM, FM, CW, LSB and USB modes, just like the Kenwood 440S does. You can turn off the annunciator via the control panel if you like.

As you switch from one band to another in SSB mode, the Argonaut does not automatically select the proper sideband as the Japanese rigs do. This could be a minor irritation to someone who isn't accustomed to having to manually select the proper sideband as the rig is tuned from band to band. Back when I had a Heathkit HW-101, I made many a fruitless trip through the spectrum trying to scrounge up a contact, only to discover I'd just wasted 15 minutes on the wrong sideband. You can learn to deal with it, but when the rig takes care of the problem for you, it frees you of one of those little nagging details you can do just as well without.

One nice touch is the 24-hour digital clock included in the display which is pretty handy for logging in the correct times for all those contacts. And it allows you to do away with one more little gadget from that cluttered radio desk. (Your desk IS as cluttered as mine, isn't it?)

You can use the tuning knob to prowl through the bands stalking one of those elusive contacts or if you know precisely where you want to go, you can punch in the exact frequency and the radio will immediately switch you to wherever you like in its coverage range.

The receiver is general coverage and frequencies of interest can be entered manually through punching the buttons on the control panel. One thing I thought a bit odd was that you have to enter the frequency in MHz only, which means you must hit the decimal point key at the proper place in the sequence. With the 440S, the decimal point is automatically placed for you. The Icom 735 doesn't offer direct entry of frequencies in its stock configuration. It took a few tries at the control panel to get used to putting the decimal point in the frequency when I was doing direct entry, but, like manually choosing the correct sideband, you could easily become accustomed to it.

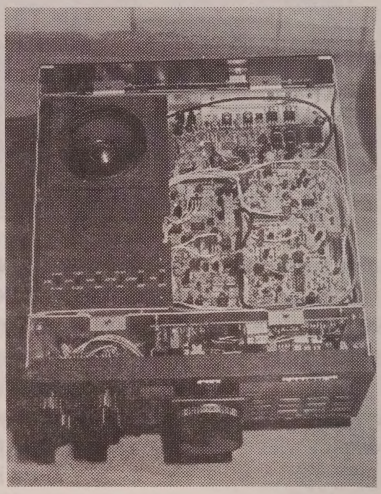
There is no provision for an external speaker. You have to make do with the top mounted speaker unless you want to do your own modification, but at a discounted price of about $1,249 ($1,445 full list price), you might think twice before breaking out the old soldering iron. Although the built-in speaker did an adequate job, the audio sounded a bit bassy to me. A tone control would improve the audio substantially. While on the subject of audio, the AF knob had to be turned up quite a bit to get an acceptable level of audio. I had to turn the AF knob to about the 1-2 o'clock position before I could hear some of the weaker stations on SSB.

By contrast, I don't think I've ever turned the AF control on my 735 past about the 9-10 o'clock position before my ears started complaining about the dB level, and as best as I can remember, my Kenwood 440S was about the same. I don't necessarily consid-

At more than $1,200, it's certainly not at the price level most QRPers are accustomed to, but it does open up multi-mode operation for the flea-power crowd....

er this to be a deficiency, it just reflects a different approach in design.

The dial light is a dull green color, quite similar to the Icom 735, but unlike the Icom's adjustable brightness level, the Argo II offers only two choices: On or off, and the on position seemed a bit dim. I found myself wishing repeatedly that I could turn the brightness up. But in fairness, I have to admit that the LCD display was perfectly readable even with the display light turned off.



The tuning knob has an adjustable clutch so you can control the amount of drag on the knob. A fingerhole in the face of the knob makes prowling through the bands an easy exercise.

The Argonaut II has an ALC LED which lights up on voice peaks on SSB or on key-down in CW. The Ten-Tec Century 22 I used to own, although it offered CW only, had this feature and it was a delight to use. The LED approach is far superior to trying to adjust the controls so voice peaks fall within a prescribed range on a meter's scale as the Kenwood and Icom do. It makes the correct adjustment to the transmitter a quick little tweak on the drive knob and then you can forget about it.

The display panel also has an LCD equivalent to an SWR-Power Meter, but this, in my opinion, is an area where a good meter movement would do better service. The output reading, as well as the SWR, is pretty coarse in its stepped approach compared to the smooth continuous sweep of a meter needle.

I like to see the movement of a needle when adjusting for best SWR values, and I also like to see the comforting sweep of that meter needle when measuring output. The meter can show minute increments of a reading and when dealing with QRP levels, that takes on added importance.

Ten-Tec's Sidney Kitrell, W0LYM, had told me a year ago, and that was reported on these pages, that the Argonaut II would put out 5 watts and go down from there well into the QRPp range, and according to my instruments,

that is certainly the case.

I have an Autek WM-1 Computing Meter which provides me with my SWR and power output (peak or average) readings. In the QRP range, the meter registers down to the 100 milliwatt level, and a slight twist on the Argo's power control knob would cause the Autek needle to smoothly sweep from full output down to the .1 watt level and from there down on to extinction on my meter. I thought it was pretty neat being able to control the output so easily and precisely. An outboard attenuator unit, which plugs into the back of the Argo II, is also available from Ten-Tec, for those milliwatters who consider anything more than a full watt's output to be an excessive power level. I did not have access to the attenuator unit to give it a try. It was tough enough trying to get contacts with the full five watts during the time I had the rig. The solar flares were not being kind to me. As far as operating is concerned, the rig produced some pretty good contacts despite the rather disheartening band conditions. Virginia, New Hampshire, Montana, Idaho, England, Scotland, South Africa and Columbia found their way into my logbook thanks to the Argo II. Code contacts were easier than SSB, but then again, with such lousy conditions, you would expect that. And all these contacts were made on an all-band dipole that's at an embarrassingly low height above ground, an average of about 15-20 feet. I have a 3-element tri-bander which normally lives on top of a 50-foot tower, but it's been taking some time off lately, and unfortunately, I did not get it back into service until after I returned the Argonaut II.

I only had a couple of phone contacts with the Argo II, but the reports from the other stations were very complimentary about the audio. Fine audio has always been a hallmark among Ten-Tec rigs and the Argonaut II demonstrates its superior audio lineage well.

A 100-watt output version of this rig should be in the stores by now, sporting the label of Delta II. The two rigs are clones in every respect except for the 100-watt amplifier appended to the Delta's RF chain, and a slightly larger price tag.

The Argonaut II is a fine little QRP rig, but if you're looking for a radio with a QRP-sized price, you'll have to look elsewhere.

However, if "First Class" is the way you like your QRP, along with the ability to work multimode as well, then the latest entry in Ten-Tec's fabled Argonaut series is well worth your very serious consideration.

Four mods for the Yaesu FT-7

By Dale Hall, KB0WZ

The Yaesu FT-7 is a good QRP rig. It lends itself to easy modification because of its plug-in circuit boards. There are a few modifications that can be a real help. All of the mods are easy and can be made in a few hours and most are for CW operation.

1) The AGC in the FT-7 is set for SSB. A faster AGC is usually preferred for CW. To change the AGC time constant, replace C427 on the IF Unit with a smaller value capacitor. Check the operation with different values to determine the best time constant. I find that 1 microfarad provides a good balance between slow (SSB) and fast (CW) AGC.

2) The FT-7 is primarily a SSB transceiver. There is no provision for a CW filter, although ample room for one exists inside. Unfortunately, an extra switch is needed to remove the filter when running SSB, and the rig does not have any extra switch positions that can be utilized for this. The easiest method is to place the filter in a plastic project box with a DPDT microswitch on the side of the case. Connect small shielded audio cable to the input and output of the filter. (If you do not have an outboard CW filter, check page 10 of Doug DeMaw's QRP Notebook for an easy to build audio filter.) Wiring of the switch is left up to you. Think of the switch as two SPDT switches and use one side as the In/Out switch and the other side as the +12 VDC line (if a battery is not used) through the bottom of the project box.

Insert the input, output and +12 VDC lines through one of the air slots on the top cover of the rig so that the lines are just between the "AF Unit" and the "Cont Unit." Attach the project box to the outside top cover of the rig using double-sided foam tape. This places the filter almost exactly over the area to which it will be connected. Be sure to leave most of the slots open to allow for airflow.

Remove those two units to facilitate the next steps. Between the units on the "IF Motherboard" are 4 holes. Pass each line through one of these holes. Solder the shields of the cables to Pin 12 on the foil side of the section where the AF Unit is mounted. This is ground. Unsolder the wire at Pin 13. Solder the filter input line to Pin 13. Solder

the wire just removed from Pin 13 to the filter output line and insulate it with tape or shrink tubing. Solder the +12 VDC line to Pin 4. No ground connection is necessary because the unit is grounded through the shields of the AF lines.

This is a very worthwhile mod and is superior to placing the filter at the speaker output.

3) The FT-7 uses an automatic CW semi-QSK circuit. But if you do not like to hear the click of a relay or the audio returning during longer pauses in your transmitting there are two possibilities for preventing this. You can use your microphone's PTT switch. But this means leaving the mic connected at all times. I don't use the mic very much and don't care for it to be in the way.

On the rear of the rig is the "External VFO" jack. Disconnect the wire at Pin 4 and tie this wire in a way that it will not touch anything. Solder a wire from Pin 4 to Pin 3 on the mic jack.

Radio Shack has a nice foot switch for tape recorder use. Connect a 5-pin DIN plug in place of its phone plug. Connect the center wire from the foot switch to Pin 4 on the DIN plug and the shield to Pin 2. When plugged into the jack, the rig can be held in transmit mode with the foot switch as long as you desire.. This is also handy when you're using the microphone.

4) The power output of the FT-7 is 10 watts. For SSB it is QRP. For CW, that's QRO. Hi!

Look on the rear of the FT-7. There are two holes near the key jack and the antenna connector. Do not touch the one near the antenna connector. The other hole contains the ALC adjustment.

Connect a wattmeter to the rig. While transmitting into a dummy load using CW mode, tune the rig for maximum output using the Tune control on the front of the rig. Now, using an insulated adjustment tool, turn the control inside the hole near the key jack until the power reads 5 watts or less. I can get mine down to 3-3.5 watts.

This is probably not the preferred way to lower the power output. If you know of a better way, I would really like to know. As long as I have had the rig, I have been looking for a better way to lower the power output of the 10-watt amp without using the ALC.

I am looking for any mods that you have or improvements on these mods. Please write and let me know your suggestions.

A simple selectivity improvement for the Century 22

By Jerry Totten, K8JRO

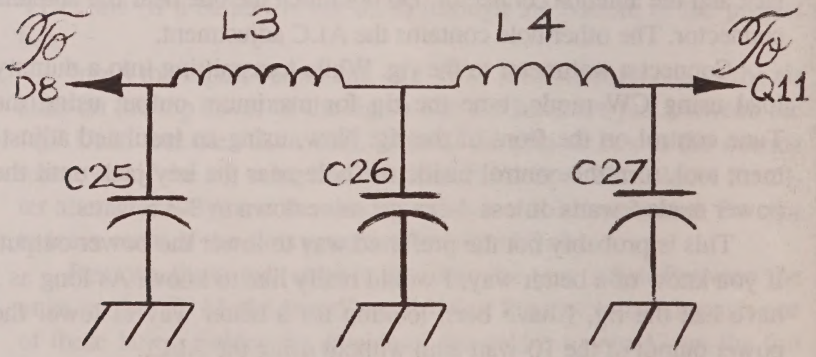
The Century 22 uses a somewhat unique selectivity system. Audio from the product detector is filtered by a Pi-Network low-pass filter (refer to schematic 81194), and routed to a two-stage audio amplifier, IC3A and B. At the output of IC3B, the signal is split with part of the signal going to the filter control and part to the active CW filter, IC5 A to D.

The amount of selectivity desired is controlled by mixing the audio directly from IC3 with filtered audio from IC5. If you do not run the filter control at its most selective position you may notice that CW signals from as far away as 12 KHz from your frequency can be heard. This is because the cut-off frequency of the two section Pi-filter is too high.

Selectivity can be improved by doubling the values of C25, 26 and 27 and L3 and L4. This will lower the cut-off frequency by a factor of 2 and yet maintain the input and output impedances.

C25 and C27 go from .47 microfarad to 1 microfarad and C26 goes from 1 to 2 microfarad. L3 and L4 are 1.0 millihenry and go to 2.2 millihenries. These parts are located on the Rcvr/Control Assembly. Save the shields over L3 and L4 to use on the new chokes.

If you would like parts information, send me a SASE to the callbook address.



Net report

By Jerry Totten, K8JRO

Participation in the MI-QRP CW Net on 3535.75 KHz every Tuesday at 9 p.m. EDT continues to be strong. In spite of summer QRN and what appears to be deliberate QRM, check-ins have numbered above average.

Thanks to N8CQA for taking over as NCS when I have been out of town. The net is a great place to meet new QRP friends.

Have you heard about the FCC audit of hams running more power than is needed to communicate? Join us on 3535 if you need proof that you can communicate with five watts or less!

Here's who to contact...

Lately, the editor has been receiving a number of items in the mail about the club which he is unable to handle. There are various people in the club who are responsible for various duties.

Subscriptions, renewals and requests for back issues should go to the club address: Michigan QRP Club, P.O. Box 80804, Lansing, MI 48908-0804. Those interested in back issues of T5W should be warned that back issues are pretty rare and requests for them are generally denied, not out of malice but simply because in most instances, they just do not exist. The order to the printer each quarter is for a number sufficient to cover the current membership roster, and no extras are ordered.

All requests for awards should also be directed to the club address in previous paragraph. There is a fee of $1 for all awards except the QNI.

Matters of an administrative nature or items for the consideration of the board of directors can be addressed to the president- Lowell D. Corbin, KD8FR, 3233 Bardaville Drive C17, Lansing, MI 48906-2473.

QRP DX briefs go to Larry Maso, NU4B, 6030 Redwood Rd., Knoxville, TN 37920.

If you need technical help or advice, C.F. Rockey, W9SCH, Box 171, Albany, WI 53502 may be able to help. A SASE would be appreciated.

Inquiries concerning the club or QRP matters in general may be addressed to the club's Public Relations Officer, Bill Lauterback, WD8DWM, 8761 Cross Road, Horton, MI 49246.

If you have something to be published in The Five-Watter and ONLY if it is to be published, then send it to the Editor, Emory R. Schley, N4NCU, 10150 SW 151st Place, Dunnellon, FL 32630. If you send stuff to the editor regarding subscriptions, contests, etc., it just gets delayed until he can route it to the proper person in the club.

And if your letter to the club, the editor, or one of the officers requires an answer, a SASE (Self-Addressed Stamped Envelope) is always appreciated.

Reduce the Icom 751 to QRP levels

By Frank Krozel, KG9H

Here is some information that other QRPers using the Icom 751 may find interesting. In order to got to a power level lower than 10 watts output, resistor R43 must be changed from 56K ohms to something lower. In my case, I had to go to 33K, and readjust both low and high preset pots, inside the radio.

By lowering the resistor to 33K and realigning both the high and low presets, I can now run from .2 to well over 120 watts.

In fact, the low power of .2 watts will just barely move the power meter on my 751. It is interesting to note over the past three days that operating under the poorest of band conditions, I have not missed one answer to a CQ on 40 meters or 20 meters, at approximately 11 p.m. Chicago time, with an output of .2 watt!

Most of my reports have been 449 or better, both with DX and stateside contacts. So much for the 100+ watts most of us hams use. Hi... Incidentally, my antenna is a hidden G5RV, mounted on top of a brick fireplace, with one lead bent to fit the roof configuration, not exactly the optimal setup, by far.

I am interested in contacting anyone who has used the TS-120S, with an external input for the ALC. I have heard that some people reduce power by using a 9-volt battery, and variable resistor. Does this work?

Is there any way to defeat the digital readout, to reduce current draw? Is it worth the effort?

TO THE EDITOR:

I would like to express a heartfelt thank you to Lowell and Robin Corbin for taking over the duties of the Membership Chairperson. I know that they have put in long hours computerizing the records from my somewhat primitive card file system. I can only hope that the job does not become too demanding.

I would also like to express my concern for the club's long-term health. A few dedicated individuals have done the vast majority of the work of running the club and publishing THE FIVE WATTER. This is not healthy for the club nor for the individuals. If everyone would contribute something, the "few" would not become overworked and burnt out.

73, Jerry Totten, K8JRO

Bits 'n' pieces...

The First Saturday Breakfast in June saw 13 in attendance- WZ8C, KF8BJ, N8NJE, N8JOI and guest BillieGene, N8CQA, W8LHG, W8AUT, W8AMY, W8IFK, W8YBS, N8LA and KD8FR... No one took roll for the July breakfast, but the following were present for the August breakfast: N8JOI and guest BillieGene, W8YBS, N8LA, N8NE, W8MYA, W8AUT, N8CQA, KE8P (who was visiting from Florida), WB8ZJL and daughter Katie (this young lady was quite taken with Ralph Caryl- W8LHG), WZ8C, NI9R and KD8FR. The First Saturday Breakfast is held the first Saturday of every month at 10 a.m. at the Regency Restaurant in Burton (near Flint), Michigan. Take the Belsay Road Exit south off I-69 east of Flint. All are cordially invited to attend... Dick Swanson, N5JWL has a Morrow MBR-5 amateur five-band receiver for which he is inviting offers. You can contact him at (512) 521-5105 during the day and at (512) 270-0306 at night... Terry, K4KJP, wants to clarify that the coax braid goes to the shorter, grounded side of the two 160-meter antennas he wrote of in March '91 T5W... With Heath abandoning the amateur radio market, you might wonder where to find projects to build. Jim Braddy, WA4DSO, 3037 Audrey Dr., Gastonia, N.C. 28054 offers plans for 50 simple projects he has collected over the past 25 years. Plans are a nominal $.50 each and he says most can be built for under $5. There are some QRP projects on the list. Contact him for a copy of his list and details... K5BDZ and WA5ACF have recently founded Tejas RF Technology which will offer basic to intermediate level kits including receivers, QRP transmitters, VFO transceivers, audio and antenna projects. Assembly instructions and related documentation will be absolutely complete, reports say. Designers who wish to contribute projects to the firm's inventory can share in patents, licensing fees and profits according to the St. Louis QRP Society's Peanut Whistle. Brochures on offerings are available by writing Tejas RF Technology, 17 South Briar Hollow Lane, Suite 101, Houston, TX 77027... Larry Maso, NU4B, who does out QRP DX columns is taking a hiatus from his column duties while a few personal considerations take greater priority in his life. Time constraints prevent him from writing the column for the time being, but hopefully, that will prove to be only temporary.73-Emory

Michigan QRP Club
P.O. Box 80804
Lansing, MI
48908-0804

FIRST CLASS MAIL

0911 06/01/92 N8PCX
C. EUGENE PEARSON
869 E BOUNDARY ST
PERRYSBURG OH
43551